



#37 Response (NE)  
Appleton  
Brown  
9/11/03

**RESPONSE UNDER 37 C.F.R. § 1.116  
EXPEDITED PROCEDURE  
EXAMINING GROUP 2853**

03500.011365. (35.C11365)

**PATENT APPLICATION**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

NORIO OHKUMA, et al.

Application No.: 08/634,255

Filed: April 18, 1996

For: LIQUID JET RECORDING  
HEAD AND PROCESS FOR  
PRODUCTION THEREOF

Mail Stop AF  
Commissioner for Patents  
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Alexandria, VA 22313-1450

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**RESPONSE TO FINAL OFFICE ACTION AND  
SUBMISSION OF DECLARATION UNDER TITLE 37 C.F.R. §1.132**

Sir:

This is in response to the Office Action dated November 29, 2002 (Paper No. 33), in connection with which a timely Notice Of Appeal was filed on June 2, 2003, the period for taking further action having been extended to September 2, 2003 by the accompanying Petition For Extension Of Time with fee.

Claims 1, 2 and 4 to 15 are in the application, with Claims 1 and 11 being the independent claims. Reconsideration and further examination are respectfully requested.

Claims 1, 2 and 4 to 15 were rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 5,478,606 (Ohkuma) in view of U.S. Patent No. 5,166,265 (Nakahata). The rejection is respectfully traversed.

The present invention as recited by Claim 1 concerns a liquid jet recording head which includes a liquid flow path having a coating resin layer. The present invention as recited by Claim 11 concerns a process for producing a liquid jet recording head wherein a coating resin layer is formed. The coating resin layer is formed from a cured product of a resin composition which includes (1) a curable epoxy compound, (2) a compound having a functional group reactive to the curable epoxy compound and fluorocarbon moiety, and (3) a curing agent. Components (1) and (2) are polymerized. According to the process of Claim 11, an ink flow path pattern is formed from a soluble resin on an ink discharge pressure generating element on a base plate; the coating resin layer is formed on the soluble resin layer; and the soluble resin layer is removed by elution to form an ink flow path. As recited by both Claims 1 and 11, the coating resin layer facilitates the smooth flow of ink through the liquid flow path.

The Office Action concedes that Ohkuma does not disclose the feature of a compound having a functional group reactive to a curable epoxy compound and a fluorocarbon moiety. However, the Office Action asserts that it would have been obvious

to modify Ohkuma with the teaching of Nakahata to include this feature. Applicants respectfully disagree.

Submitted herewith is a Declaration Under Title 37 C.F.R. 1.132. As shown by the experimental data set forth in the Declaration, the composition of the present invention exhibits hydrophilicity, even though the composition contains a fluorocarbon compound. In contrast, all of Nakahata's acceptable compositions are hydrophobic, having contact angles ranging from 81 to 94 degrees.

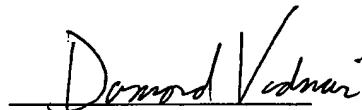
Accordingly, no motivation is seen for using Nakahata's composition in Ohkuma's ink jet head. Nakahata nowhere mentions that it might be suitable in an ink environment or an ink jet head. Nakahata discusses his composition in the context of "automobile panels," a field which is far different and not applicable to the liquid jet recording head contemplated by the inventors herein. In this regard, the Office Action contends that the present invention and Nakahata are both directed to providing a hydrophobic resin composition. See page 6 of Office Action. In fact, this is not the case. As demonstrated in the Declaration, the resin composition of the present invention exhibits hydrophilicity.

Applicants therefore conclude that any permissible combination of Nakahata and Ohkuma would not teach or suggest the claimed invention, and it is respectfully requested that the Section 103 rejection be withdrawn.

No other matters being raised, it is believed that the entire application is fully in condition for allowance, and such action is courteously solicited.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

  
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